C—continued
Irish Sea, 396
Japan/New Zealand, 278
Large Load, 235
Maasvlakte new port, 442
Mediterranean/Far East, 489
New Zealand/Europe, 441
Poland, 237
Security, 235
South Africa/Europe, 441
Trans-Siberian, 355
UK/Australia, New Zealand, 235
United States/Sri Lanka, 308
Container Pallets or LASH, 80
Conversion of locked basins to tidal docks, 427-428
Cost/output ratio of a trailing suction hopper dredger, 366-369
Cranes:
Electric overhead travelling, 270
Largest gantry, 236
Rotterdam gantry, 309
Crisis on the St Lawrence Seaway, 207-208
Crude oil vessels, on lease, 436
Cruising, 192
Cyprus, Limassol, 347

D

Dagenham, 118
Dampier—a modern ore port, 84-87
Dangerous cargoes, 12
Danger warnings, not always enough, 68
Danish Hydraulic Institute, 2
Deepsea exploration, breakthrough in, 336
Denmark:
Aarhus, model of port, 3
Hanstholm harbour, model of, 3
Det norske Veritas' Rules, 327
Developing countries, port management training for, 124-129
Development of physical and mathematical models, 413-416
Development of synthetic fabrics for hydraulic structures, 410-411
Development programme for the Forties Field, 465-470
Diving, suit for deepsea work, 70
Dock gate, world's largest, 293-294
Docks, definitions, 69
Dover, 71, 118, 271, 316
Dover Strait:
Casualties in, 12
Rogue vessels, 11
Traffic problems, 10-13
Dredging:
American seminar, 211
Construction of an artificial island, 34
Costs, 406-409
Cuts in Docks Board bill, 32
Escalating costs of essential work, 223
Floating dredging hose, 319
Maintenance on Clyde, 59-63
Sound problems on board, 34
Trailing suction hopper dredger, cost/output ratio of, 366-369
UWIST Seminar, 320
Yield and efficiency of maintenance dredging, 5
Dredging projects:
Bay of Plenty, New Zealand, 223
Belfast, 320
Bristol, 320
Central American study, 112
Drilling and dredging a pipeline trench, 222-223
Dunkirk, 319
Dutch Delta region, 353
Florida swamp, 395
Gibralter Harbour, 395
Grangemouth Docks, 438
Haldia, India, 276
Huelva, Spain, 395
Hungerford lock, 439
D—continued
India central facility, 76
Jersey, 438
Leaching mains at Hornsea, 224
Lower Seine, 395
Mangalore, India, 276
Maplin trial bank, 75
Marchwood, Southampton, 276
Menai Straits pipeline, 438
Mexico, 319
Montrose quayside, 112
Northern Island, 146, 354
Nova Scotia, 146
Port Kembla, 224
Port Qasim, Pakistan, 276
Quebec, 193
Seal Sands, Teesside, 484
Silvertown, River Thames, 486, 487
South Africa, East Coast, 275
Teesside contract, 111
Toronto test dredging, 75
Tynemouth, 394
Vancouver, Fraser River, 276
Wilhelmshaven, 485
Dredging vessels:
Australian built, 76
Bucket dredgers for Turkey, 394
Chinese order self-propelled dredgers, 146
Crew comfort, 275
German built dredger for South Africa, 275
Heavy duty cutter suction dredger, 76
Hopper barges, 59
India orders trailing-suction dredgers, 145
New Zealand, 438
Plymouth dump barges, 395
Sand suction dredgers, 146
Suction dredger, 486
Trailing dredgers for China, 76
Trailing suction dredger, 112
Drilling and blasting techniques, 165-171
Drilling platform, New Zealand, 470
Drought slows freight on the Rhine, 134
Dry-cargo ship, world's largest, 29
Dry dock:
Dubai, 269
Nigg Bay, Scotland, 293
Teneriffe, 480
World's largest, 436
Dubai, 191
Dry dock, 269
Dublin container terminal now operational, 135-136
Dumping of waste at sea, 459
Dundee, 63, 345, 471, 477
Dungeness lights, 25
Dynamic loading of marine structures, 416
Dynanometer, Stevenson's wave-pressure, 100

E

Echo sounder records, seabed density measurements related to, 423-424
Eddystone Light, 18
Electrical repairs, in emergency at sea, 28
Energy crisis, 199
Emergency electrical repairs at sea, 28
Erie, Lake, 331
Esbjerg boosts Danish export efficiency, 212-213
Europe Canal, 328
Europort, 333

F

Falmouth, 139
Falmouth, is rich revival in prospect, 139-140
Far East Freight Conference, 308, 309
Fatal Accidents Acts, 459

F—continued

Felixstowe, 71, 317, 441
Fastest growing UK port, 242-244
Improved facilities, 192
Firth of Forth, 346
Five-tower system for offshore waste disposal, 137-138
Fleetwood, 226
Floating classroom, 20
Flotta oil terminal, Orkney Islands, 457-458
Forklifts, expanding use of in Spain, 21
Forties Field, Development programme for, 465-470
Fos/Marseilles, Anti-pollution measures at, 342-343

France:
Antifer, 44, 346
Le Havre, 44, 227, 389, 431, 478
Marseilles-Fos, 348
Rouen, 431, 478

Freight services:
Aberdeen/Scandinavia, 80
Air-sea cargo service, 151
Antwerp/New Zealand, 481
Atlantic/Far East, 279
Australia/UK, 235
Beirut/Liverpool container service, 151
Belfast/Liverpool, 80
China/Japan, 235
Esbjerg/UK, 270
Europe/Australia, 489
Europe/Gulf Coast, 234
Far East/Europe, 396
Felixstowe/Far East, 309
Felixstowe/Hong Kong, 40
Goole/Mediterranean, 116
Great Lakes, 188
Gulf of Mexico/North Sea, 80
Hull/Zeebrugge, 309
Irish Sea, 396
Japan/Australia, 192
Japan/Europe, 355
Japan/New Zealand, 278
Kings Lynn/Hamburg, 397
Liverpool/Dublin, 39
London/Mexico, 356
New Zealand/Europe, 233
New Zealand/United Kingdom, 235
Plymouth/Roscoff, 442
Preston/Larne, 309
Rotterdam/Ipswich roll-on roll-off, 192
"Seatrain", 116
Sri Lanka/China, 309
Tees/Rotterdam, 308
Tilbury/Zeebrugge, 396
United States/Sri Lanka, 308

G

Gas, Maui, New Zealand, gas field, 256
Germany, Hamburg, 55, 347
Gibralter, 395, 430
Goliath crane orders, 29
Goole, 116
Grangemouth, 477
Great Lakes, 207, 489
Bulk Freighters, 315
Freight Services, 188
Pilots, 341
Greenock and Seatrain, 116
Grimsby, 35, 278
Guernsey, 272
Gulf of Mexico, 80

H

Harbour master's limits of jurisdiction, 106-107
Harbour radar comes of age, 385-386
Harvey, Lt Commander, 266

H—continued

Harwich, 243
History of breakwaters, 98-101
History of coastal engineering, 16-19
History of the movement of coast material, 324-327
History of wave and tide theory, 178-181, 247-249
HM Naval Base, Devonport, 31
Hong Kong, 74, 119, 478
Cargo handling, 278
Hovercraft, 236
United States, 270
How a Taniwha will be harnessed, 256-258
Hull, 35, 118, 153
Labour surplus problem, 7
Humber, 225
Humber estuary development, tests completed on plans for, 453
Hydraulic models, 2
Hydraulic Research Station, Wallingford, 2, 204
Hydrographic surveying, 14

I

IATA, 261
Immingham cuts cost of coal transport, 141-143
Immington Oil Terminal, 33
India, central dredging facility, 76

India, Ports:
Calcutta, 73
Gulf of Kutch, 73
Haldia, 73, 276
Mangalore, 276
Vizagapatnam, 155, 479
India, Trailing-suction dredger order, 145
Indonesia, 476
Industry backs up Tunisia's five ports, 303-304
Initial Maritime Satellite Consortium, 50
Institute of Oceanographic Sciences, 423
International Association of Ports and Harbours, 1
International Cargo Handling Co-ordination Association (ICHCA) 278
International Chamber of Commerce, 344
International Harbour Conference, 411
International Regulations for Preventing Collisions at Sea, 10, 13
Ipswich, 71, 153, 190
Iron ore, Export project in South Africa, 295-298
Irregular waves, model testing with, 2

Israel:
Haifa, 432
Tel Hanan, 432

Italy:
Santa Eufemia, 432
Sardinia, 432

J

Japan, 235
Ariake, 269
Ariake shipyard nearing completion, 187
Computer system for shipbuilding, 148
Jersey, 438

K

King's Lynn, 346

L

LASH, 80, 308, 352
Layout of marina entrances in a tidal flood defence system, 339-341
Lebanon, Beirut and Tripoli, 347
Legal Notes, 23, 68, 105, 459
Le Havre, 235
Le Havre/Antifer—two ambitious projects, 44-47
Leith, 107, 471
Liability for wash, 23
Libya, Benghazi, 390
Lifeboats, For offshore oil platforms, 458
Limerick, 250

L—continued

Line throwing system, Non-pyrotechnic, 412
Liquid natural gas:
Concrete carriers, 487
Discharge tests, 116
Europe's largest tank, 369
Japan fleet, 151
World's largest carrier, 350
Liverpool, 39, 55, 71, 152, 153, 226, 345, 388, 478
Liverpool plans a brighter future, 175-177
Lloyd's Register of Shipping, 187, 188, 436
Locks, Lloyd's Register design for doors, 152
London, 225
China Terminal, 235
Labour surplus problem, 7
London, Port of, Authority, 430
Longest ore jetty in the world, 376-380
Lowestoft, 71
Lumber carriers, 315

M

Maintenance dredging—yield and efficiency, 59-63
Malaysia:
Klang, 74
Tanjong Gelang, 478
Management-labour relations, Swedish report on, 334
Manchester, Freight terminal, 489
Manoeuvring trails of steerable rubber propeller tug, 77
Maplin, 43, 161
Marinas, 104
Marine structures, Dynamic loading of, 416
Marine terminal, 411
Marine traffic systems, research on, 10
Maritime nations urged to join pollution fight, 213
Massive pipe bundle laid in Rotterdam Europort, 333-334
Mediterranean service for Goole, 116
Menai Straits, 438
Mersey Docks and Harbour Board, 385
Middle East:
Abu Dhabi, 73
Arabian Gulf, 37
Bahrain, 73
Milford Haven, 388
Milford Haven, Amoco marine terminal, 417-418
Models, development of physical and mathematical, 413-416
Model testing with Irregular Waves, 2-5
Montrose, 107, 471
Moon-man suit for deepsea work, 70

N

Nationalisation, 405
National Physical Laboratory, 10
Navigation and communication by satellite system, 50
Netherlands Antilles, Curaçao, 268
Netherlands, The:
Amsterdam, 431
Amsterdam, Improved cargo handling, 396
Holland, 36
North Sea, 272
Rotterdam, 333
Waalhaven, Rotterdam, 373
New canal to link Lakes Erie and Ontario, 331-332
New coal port at Hay Point, Australia, 130-133
New style ore unloading terminal, 370-372
New tethered float breakwater system, 425-426
New Zealand:
Maui gas field, 256, 476
Natural gas field, 470
New Zealand, Ports:
Auckland, 253-255, 278
Lyttleton, 255
Tauranga, 274
Wellington, 278, 389
Whangarei, 274

N—continued

New Zealand, Refrigerated container service, 233-234
New Zealand Shipping Corporation, 268, 433
Problems with Union, 279
Non-pyrotechnic line throwing system, 412
North Atlantic Deepwater Oil Terminal, 51-54
North Sea, 80
North Sea, Offshore 1974 Conference, 5
North Sea oil, 63, 449, 460, 463-464, 465-470
North Sea oil, an area of enormous potential, 463-464
Nuclear powered container vessels, 398

O

Observation on general cargo handling, 48-50
Offshore industry:
Conference, 338
Maui, New Zealand, gas field, 256
Most advanced drill ship, 312
Norway supply ships, 351
Oil drilling, 206
Safety lifeboats, 458
Stornoway, 312
Offshore News, 471
Offshore North Sea 1974 Conference, 5
Offshore technology, 460
Offshore waste disposal, Five tower system for, 137-138
Oil, North Sea, 63
Oil ports should demand guarantees, 107
Oil refining capacity, United States, 51
Oil strikes, South China Sea, 54
Oil Terminal, Antifer, 44
Oman, Risut, 191
On harbour master's limits of jurisdiction, 106-107
Ontario, Lake, 331
Optical wave recorders, 91-92
Ore jetty, longest in the world, 376-380
Ore/oil tanker, 237
Ore unloading terminal, new style, 370-372
Organisation for Economic Co-operation and Development (OECD), Fears shipping over-supply, 189
Orkney Islands, 107, 472
Flotta oil terminal, 457-458
Oscillations of Port Kembla Harbour, 383-384
Outmarsh reclaimed at The Wash for agricultural use, 437

P

Pakistan, Port Qasim, 276
Pallets, 80
People, Ports and Places, 25, 65, 108, 147, 183, 218, 263, 299, 359, 402, 446, 492
Persian Gulf, 432
Peterhead, Scotland, 35, 471
Petroleum, a little history, 460-462
Philippines, Minanao, 433
Poland, First molton sulphur carrier, 313
Polish Ports, 433
Polish yard anniversary, 27
Pollution:
Anti-oil boom for Spain, 155
Fos/Marseilles, 342
Maritime nations urged to join fight, 213
Oil defence boom in Devon, 206
Port and Ocean Engineering under Arctic Conditions, Second International Conference on, 5
Portland, 271
Port management training for developing countries, 124-129
Ports in young countries—the fight for progress, 64
Portsmouth—a new berth nears completion, 307
Port Talbot, Dry dock complex, 113
Portugal, Leixoes, 227
Predicting the waves in coastal waters, 93-94
Purfleet, 153

Q

Quay design on the tidal Thames, 172-174
Quay walls, repair and strengthening of, 381-382

R

Railway dry dock transfer system, 114
Rapid growth at Port of Bilbao, 21-22
Redcar, 225
Reflective surfaces aid rescue in the dark, 211
Refrigerated containers from New Zealand once a fortnight, 233-234
Repair and strengthening of quay walls, 381-382
Republic of Ireland:
- Cork, 272, 388
- Dublin, 39

Rescue, Reflective surfaces aid in the dark, 211
Responsibility for goods passing over quay, 105-106
Rhine, Drought slows freight, 134
River inlets, Thames, closure of, 245-246
Roll-on, roll-off services:
- Channel, 258
- Danish, 270
- Felixstowe, 243
- Felixstowe, third facility, 279
- Felixstowe/Zeebrugge, new route, 442, 489
- Grimsby, 279
- Guernsey, 309
- Humber terminals, 453
- Kings Lynn/Hamburg, 397
- Le Havre, 235
- Liverpool/Dublin, 39
- Melbourne terminal, 442
- Rotterdam/Ipswich, 192

Royal National Lifeboat Institution, 375
Royal Navy, 238
Rumania, Danube canal, 227
Russia:
- Odessa, 227
- Wrangel, 73

S

Safety precautions, Plea for increased, 409
St Lawrence Seaway, crisis on, 207-208
Salvage:
- Queen Elizabeth (former), 403
- Wahine, 264

Satellite system, navigation and communication by, 50
Saudi Arabia, Jeddah, 347
Scandinavia, Largest vessel, 270
Scandinavian service from Aberdeen, 80
Seabed density measurements related to echo sounder records, 423-424
Seal Sands, 111
Seattle, a pioneer port, 284-287
Seaweed, artificial, 289-292
Semi-submersible platform, 459
Shannon Estuary—a revival of interest, 250-252
Sheerness, 190
Shetlands, 227, 272, 471
Shipbuilding and Shiprepairing, 27, 77, 113, 148, 187, 236, 267, 312, 349, 391, 434, 480
Shiprepair facilities:
- Bahrain, 148
- Canada, 236
- Canadian dry dock study, 149
- Falmouth tanker-repair depot, 139
- Genoa floating dock, 150
- Mombasa (Kenya) dry dock, 267
- Polish dry dock, 392
- Polish floating dock for Sweden, 148
- Port Talbot dry dock complex, 113
- Singapore dock, 115

S—continued

Shipyards:
- Amsterdam, 482
- Appledore, 267, 314, 436
- Ariake, 187, 269
- Askøy Island, Bergen, 312
- Belfast, 314
- Birkenhead, 314
- Brazil, 188, 269
- Cadiz, 270
- Canada, 236
- Clyde, 482
- Curaçao, 268
- Eriksberg, 79
- Gdynia, Poland, 27, 435
- Götaverken, 79
- Gothenburg, 79
- Hong Kong Study, 315
- Japan, 238, 267, 351, 434
- Japan leads world shipbuilding boom, 149
- Kobe, Japan shallow draught breakthrough, 187
- Lower Clyde, 315
- Newcastle, Australia, 480
- New York, 392
- Norwegian/United States Co-operation, 350
- Records broken world-wide, 268
- St Nazaire, 314
- San Diego, 393
- Southampton, 434
- South Korea, 267
- Spain, 349
- Sunderland, 267
- Sweden, 391
- Taiwan, 315
- Vancouver, 393

Singapore, 115
- More ships from China, 308

Sound Research Laboratories, 34
South Africa:
- Durban, 275
- East London, 279
- Saldanha Bay, 74

South African Iron and Steel Corporation, 295
Southampton, 71, 161
- Container traffic, 477
- Dock expansion, 95

South China Sea, Oil strike, 54
Spain:
- Barcelona, 347
- Barcelona car-ferry, 39
- Cadiz, 88, 270

Standing off, during mooring, 32-34
Suez Canal, 242, 429, 454
- Re-opening, 365

Sugar traffic, 48
Sulphuric acid tanker, 31
Sulphur, molten carrier, 313
Sunderland, Ship "factory", 267
Supertankers, 238
- Ariake shipyard, 269
- Built in Scandinavia, 270
- Draught, 45
- France, 314
- Gulf Coast, 482
- Japan built for Norway, 79
- Norway, 312
- One-million ton tankers, 114
- Spain, 392
- Taiwan, 314, 315

Surveying, More accurate surveying needed, 208
Survey ship, Royal Navy, 238
Sweden, Stockholm, 391, 431
Swedish report on management-labour relations, 334
Synthetic facrics for hydraulic structures, Development of, 410-411

T

Taiwan, Supertanker shipyard, 314
Tanzania, Dar-es-Salaam, 119
Tay Estuary, charting of, 162-164
Tees and Hartlepool, 227, 271, 317, 430
Teesside, the development of an industrial port, 450-453
Test on scale model floating breakwater, 200-203
Thailand, 118
  Kra Canal, 347
  Phanket, 227
Thames, 245
Canvey Island, 411
Thames:
  Quay design, 172
  Qyat walls, 381
Thistle Field, Oil, 470
Thurso, 388
Tidal docks, Conversion of locked basins to, 427-428
Tidal flood defence system, layout of marina entrances in, 339-341
Tilbury, 39, 118
Towing tank, 313
Traffic problems in the Dover Strait, 10-13
Trans-Europe Waterway, 328-330
Transformation of Southampton gains momentum, 95-97
Transport managers, top level training for, 265
Tugs, 77, 435
  For offshore rigs, 481
  Most powerful, 238

Tunisia:
  Five Ports, 303-304
  Bizerta, 303
  Gabes, 303
  La Goulette, 303
  Sfax, 303
  Tunis, 303

Turkey:
  Alsancak, 227
  Bosporus Bridge, 190
Tyne, Port of, 430

U

United Kingdom,
  British Transport Docks Board Ports, 316
  Leads cruise operations, 192
  National Ports Council (NPC), 292
United Nations Conference on Trade and Development, 124, 375
United States, Coastal Zone Act, 428
United States Customs Bureau, 235

U—continued

United States, New York Port Authority, 6

United States, Ports:
  Atlanta, 433
  Baltimore, 273
  Buffalo, 227
  Conneaut, Ohio, 370
  Long Beach, California, 72, 191, 273, 390
  Los Angeles, 155
  Louisiana, 37
  Martinez, 227
  Miami, 37
  Mobil, Alabama, 389
  New Orleans, 273, 288
  New York City, 292, 318, 348
  San Francisco, 37
  Seattle, 284-287
  Toledo, 191, 389
Unit-load cargo traffic, improvement of, 260
Unit-load service Belfast/Liverpool, 80

V

Vancouver—Canada's busiest port plans massive expansion, 56-58
Very Large Crude Carriers, 30, 51, 149, 349-350, 434
Vigo, Port of, plans for growth, 209-211

W

Wallingford, Hydraulics Research Station, 2
Wallingford, work continues on major projects, 204-205
Wash, The, 437
Wave and tide theory, history of, 178-181, 247-249
Waves, generation of, 2
Waves in coastal waters, predicting of, 93-94
Wave recorders, optical, 91
Waves, irregular, 2
Waves, regular, 3, 4
Welland canal, 227, 331
West Indies, Barbados, 479
Wharf construction, Antarctica, 171
Wisbech, Capital of the Fens, 335-336
Withdrawable sterngear, 269
World Dredging News, 32, 75, 111, 145, 193, 222, 275, 319, 353, 394, 437, 484
World Port News, 35, 71, 118, 153, 190, 225, 271, 316, 345, 388, 430, 477
World's biggest tug, 79
World's largest dry-cargo ship, 29

Y

Yugoslavia, Sambor, 36

Index to Contributors

Richard Angove, 139
Captain John Bain, 77
W T Bakker, 289
Dr J Bax, 289
John Black, 412
Keith Bradley, 463
Ir Van Brakel, 366
J E Bridger, 335
M R Bull, 215, 303
A T Buller, 162
J A Charlton, 91, 162
Dr D J Clarke, 383
J T Davies, 91
F Doerflinger, 328
Kathleen Evans, 454
Gerhard Everwyn, 295
Dr T F Gaskell, 465
D Gouvenot, 373
H J van Griethuysen, 373
Dr Grootenboer, 289
Peter A Hakman, 51
N J Heaf, 93
J A Hirs, 373
E Horvat, 373
Bea Howell, 284
D R Johnson, 10
R Kirby, 423
J McManus, 162
W R Morrison, 165
W R Parker, 423
F Thomas Poole, 68, 459
Bill Reid, 233
R A C Richards, 21, 88, 209
Dr J F Riddell, 59
A G Robinson, 450
R P Rowe, 172, 245, 339, 381, 427
William Scholes, 113, 130
Peter Shaw, 200
Torben Sorensen, 2
Paul Soros, 51, 141
B J Thomas, 124
Pauline Thomas, 56
G E Toles, 425
Dr J M Townson, 16, 98, 178, 247, 324, 413
W H Tutuarima, 289
R J Webb, 406
Laurence Webley, 23, 69, 105
J H W Wheatley, 10